Klamath Network Featured Creature
April 2009

Common Rockweed
(Fucus gardneri)

FIELD NOTES:

General Description:
Common Rockweed is a common brown alga occurring in the high intertidal zone along our coast. It is generally an olive to olive brown color. Height of the "leaves" (or thalli in science speak) is between 10 and 25 cm, or about 5 to 10 inches. The more basal and older portions have a prominent midrib. In mature individuals, gas-filled air-vesicles called receptacles are present in pairs on either side of the midribs, which distinctively "pop" underfoot.

Their brownish color comes from a pigment, fucoxanthin. This pigment, used to broaden the absorptive ranges of sunlight, is being investigated for potential pharmaceutical purposes. Current investigations center on potential uses as a cure for obesity, diabetes, and maybe even cancer.

Brown algae also contain algin, a polysaccharide in their cell walls. Algin's numerous uses range from use in ice cream manufacturing to dressings for severe burns.

As a brown alga, Rockweed is related to the giant kelp found off-shore. The size and relative complexity once led researchers to believe that brown algae were the precursors to land plants. However, recent evidence suggests that green alga, *Coleochaete*, has that honor.

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Habitat:
Fucus gardneri grows in the mid to high intertidal zones. In fact, it serves as a useful indicator for beachcombers to identify where this intertidal zone is!

As a relatively large non-vascular plant, Rockweed provides a complex, heterogeneous habitat for many mobile invertebrates, such as hermit crabs or isopods. The next time you are at the beach, take some time to gently flip through the Rockweed – you might be surprised at the number of invertebrates hiding out.

Williams, S. L. and M. N. Dethier

Distribution:
Rockweed is found from southern California, north to the Alaskan coastline.

Where to see it in the Klamath parks:
Rockweed in our parks will be limited to Redwood National and State Parks. In our region, though, it should be abundant along most of our rocky coast line.

Reproduction:
In the reproductive stage, this alga will produce "receptacles." These receptacles contain structures that produce eggs and sperm.

Reproduction, continued:
Once gametes (aka, the eggs and sperm) are formed, these receptacles will dry out at low tide when the Rockweed is exposed, thereby shrinking the receptacle and forcing the gametes out. The gametes stick to hairs around the receptacle and release when the tide is in. Gametes can then fertilize each other, forming zygotes (aka, fertilized eggs), to disperse and attach to substrate before the tide recedes.

Status:
Rockweed is common throughout its range. However, it has proved useful as an overall indicator of ecological status. The response of Rockweed to the Exxon Valdez spill (almost exactly 20 years ago) suggested that full recovery took over 7 years. When combined with monitoring of other dominant rocky intertidal taxa, key functional trends in our coastal habitats can be monitored.

www.ubcbotanicalgarden.org

Additional Information:
Sze, P. 1998. A Biology of the algae. WCB McGraw-Hill. 3rd edition.

Lamb, A., and B. P. Hanby. 2005. Marine life of the Pacific Northwest. Harbour Publishing.